

PATENT APPLICATION OF
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FOR
CONNECTOR WITH FRANGIBLE SEAL

BACKGROUND-FIELD OF INVENTION

The present invention relates generally to a connector for connecting two tubular members. More specifically, the present invention relates to a connector for connecting two tubular members with a frangible seal separating the two tubular members.

BACKGROUND-DESCRIPTION OF RELATED ART

Various designs for connectors for connecting hoses and tubes exist for joining two hoses or tubes. Generally, a connector is used to connect two hoses or tubes to allow formation of a longer hose or tube. A connector may also be used to allow a hose or tube to be separated into shorter sections or addition of adapters such as a Y-adapter or a nozzle.

Some connectors have a built-in valve that allows liquid flowing between the two connected hoses or tubes to be interrupted and controlled. However, these type of connectors are relatively complicated and expensive, particularly when compared to the innovative yet simple design of the present invention. Furthermore, none of the connectors allow insertion and sliding of one tube into another during use and also maintaining a seal between the two tubes, thus preventing fluid from one tube to enter the other tube, prior to actual application.

SUMMARY OF THE INVENTION

The connector with frangible seal comprises of a tubular cylinder separated into two sections by a frangible seal. Preferably a first section has an inside diameter that will receive a first tubular member with an outside diameter approximately that of the inside diameter of a second tubular member received in the second section of the connector with frangible seal wherein when the two tubular members are urged toward each other the frangible seal separating the two tubular members will be fractured and the first tubular member will be inserted into the second tubular member forming a through path between the two tubular members.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows the preferred embodiment of the connector with frangible seal.

Figure 2 shows the preferred embodiment of the connector with frangible seal after the frangible seal is fractured.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Figure 1 shows the preferred embodiment of the present invention. In the preferred embodiment, the connector with frangible seal comprises of a tubular cylinder 1 separated into two sections 2, 3 by a frangible seal 4. Preferably a first section 2 has an inside diameter that will receive a first tubular member 5 with an outside diameter approximately that of the inside diameter of a second tubular member 6 received in the second section 3 of the connector with frangible seal wherein when the two tubular members 5, 6 are urged toward each other the frangible seal 4 separating the two tubular members 5, 6 will be broken and the first tubular member 5 will be inserted into the second tubular member 6 to allow a through path for fluid to move through the two tubular members 5, 6.

The tubular cylinder 1 may have a constant wall thickness in both the first section 2 and the second section 3. The tubular cylinder 1 may also have wall thickness of varying thickness such as that shown in figure 1 wherein the outside diameter of the tubular cylinder 1 is approximately constant throughout its length. The inside diameter of the tubular cylinder 1 may also taper from a larger diameter at each of the open ends toward a smaller diameter near the frangible seal 4.

Another embodiment of the connector with frangible seal may have a tubular cylinder 1 separated into two sections 2, 3 by a frangible seal 4 wherein a first section 2 has a section with reduced inside diameter that is slightly smaller than the outside diameter of the first tubular member 5 and a second section 3 has a section with reduced inside diameter that is slightly smaller than the outside diameter of the second tubular member 6 such that there is an interference fit between the tubular members 5, 6 and the tubular cylinder 1. Yet another embodiment of the connector with frangible seal may have a tubular cylinder 1 separated into

two sections 2, 3 by a frangible seal 4 wherein a first section 2 has one or more protrusions on its inside diameter that will increase interference between the tubular cylinder 1 and the first tubular member 5 and retain the end of the first tubular member 5 within the tubular cylinder 1 and a second section 3 with one or more protrusions on its inside diameter that will increase interference between the tubular cylinder 1 and the first tubular member 5 and retain the end of the first tubular member 5 within the tubular cylinder 1.

The frangible seal 4 may be a membrane separating the two sections 2, 3 of the tubular cylinder 1 and may be formed by the same material used to form the tubular cylinder 1. The frangible seal 4 is formed such that when the first tubular member 5 is urged toward the second tubular member 6 the frangible seal 4 will be fractured by the first tubular member 5 to allow the first tubular member 5 to slide into the second tubular member 6 and form a through path for fluids to move through them as shown in figure 2. The frangible seal 4 may also be formed by covering the end of one tubular member with a thin membrane and then inserting the end of the tubular member into the tubular cylinder 1 thereby forming the frangible seal 4 separating the tubular cylinder 1 into two sections 2, 3.

Although the description above contains many specificities, these should not be construed as limiting the scope of the invention but as merely providing illustrations of some of the presently preferred embodiments of this invention. Thus the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples given.